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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/684,030	10/09/2003	Michael E. Goss	200315391-1	3183
22879	7590	11/22/2010	EXAMINER	
HEWLETT-PACKARD COMPANY			TUNG, KEE M	
Intellectual Property Administration			ART UNIT	PAPER NUMBER
3404 E. Harmony Road				
Mail Stop 35			2628	
FORT COLLINS, CO 80528				
NOTIFICATION DATE		DELIVERY MODE		
11/22/2010		ELECTRONIC		

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MICHAEL E. GOSS,
DANIEL G. GELB, and THOMAS MALZBENDER

Appeal 2009-008930
Application 10/684,030
Technology Center 2600

Before JOHN C. MARTIN, ALLEN R. MacDONALD and
MARC S. HOFF, *Administrative Patent Judges*.

MacDONALD, *Administrative Patent Judge*.

DECISION ON APPEAL¹

¹ The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the “MAIL DATE” (paper delivery mode) or the “NOTIFICATION DATE” (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.

STATEMENT OF CASE

Introduction

Appellants appeal under 35 U.S.C. § 134 from a final rejection of claims 1-33. We have jurisdiction under 35 U.S.C. § 6(b).

Exemplary Claim

Exemplary independent claim 13 under appeal reads as follows:

Claim 13. A system for cutting view dependent visual data for a virtual environment, comprising:

a view volume generator for determining a view volume of a viewing participant within said virtual environment, wherein said view volume defines a field-of-view of said viewing participant within said virtual environment;

a comparator for determining a proximity of a representation of an observed object in said virtual environment to said view volume; and

a processor for processing a view dependent visual data stream of said observed object only when said representation is within a specified proximity to said view volume.

*Rejections*²

1. The Examiner rejected claims 13-15, 17-24, and 27-33 under 35 U.S.C. § 102(b) as being anticipated by Jain U.S. Patent 5,745,126.

2. The Examiner rejected dependent claim 16, 25, and 26 as being unpatentable under 35 U.S.C. § 103(a) over the combination of Jain and Sullivan U.S. Patent 6,100,862.³

² The appeal as to claims 1-12 is dismissed due to Appellants' failure to respond to the new ground of rejection in the Answer. (Ans. 3 and 19).

³ The rejection of dependent claims under 103(a) is not separately argued from the rejection of the independent claims under 102(b).

Appellants' Contentions

1. Appellants contend that the Examiner erred in rejecting claims 13-15, 17-24, and 27-33, under 35 U.S.C. § 102(b) because (App. Br. 9-11):

Appellants understand Jain to teach a method or system that enables each viewer of a broadcast event, such as a football game, to be their own "director" (col. 2 line 67) by selecting, for example, a particular object that appears in a scene or an event depicted in the scene that they are interested in (Col. 7 lines 36-42). In a specific example, a viewer may select that they are interested in a particular player or the football itself (Col. 7 lines 33-34). In this case, the selected object (foot ball or particular player) may be classified, tagged and tracked (Col. 7 lines 51-64) to enable the viewer to view the selected object/event. It is possible for one of Jain's viewers to select a perspective that is not available from any camera (Col. 19 lines 5-6). Therefore, Appellants understand Jain, in one embodiment, to teach a view volume that surrounds a selected object or event. Since Jain's view volume surrounds a selected object or event, Appellants do not understand Jain's selected object or event to be capable of moving in or out of Jain's view volume for Jain's selected object/event.

Appellants do not understand Jain's object bounding box to teach or suggest the embodiment recited by Claim 1 either. For example, Appellants understand Jain's object bounding box to be used as a bounding box for an object and therefore the object that the bounding box surrounds would not move in or out of its bounding box. Further, even when objects are within relative proximity of each other, they are still classified as separate objects. This is possible because of Jain's history and tracking mechanism (Col. 35 lines 35-51).

Appellants do not understand Jain's cameras to teach or suggest the embodiment recited by Claim 1 either. For example, Appellants do not understand Jain to teach or suggest, among other things, processing a view dependent visual data stream of an observed object (observed by Jain's camera) only when said representation is within a specified proximity of a view volume of Jain's camera.

Thus, Appellants do not understand Jain to teach or suggest "processing a view dependent visual data stream of said observed object only when said representation is within a specified proximity of said view volume" (emphasis added) where "said view volume defines a field-of-view of said viewing participant within said virtual environment" (emphasis added) and said representation is "a representation of an observed object in said virtual environment" nor to teach or suggest "determining a proximity of a representation of an observed object in said virtual environment to said view volume," as recited by Claim 1.

The Response to Arguments section states, "it is noted that the respective claim language is silent as to any limitations directed toward how said participant is graphically represented in said virtual environment." Appellants respectfully submit that Claim 1 recites, "wherein said view volume defines a field-of-view of said viewing participant... determining a proximity of a representation of an observed object in said virtual environment to said view volume...processing a view dependent visual data stream of said observed object only when said representation is within a specified proximity to said view volume" (emphasis added).

Issues on Appeal

Whether the Examiner has erred in rejecting claims 13-15, 17-24, and 27-33 as being anticipated?

Whether the Examiner has erred in rejecting claims 16, 25, and 26 as being obvious?

ANALYSIS

We have reviewed the Examiners' rejections in light of Appellants' contentions that the Examiner has erred. We disagree with Appellants' conclusions.

We adopt as our own (1) the findings and reasons set forth by the Examiner in the action from which this appeal is taken and (2) the reasons set forth by the Examiner in the Examiner's Answer in response to Appellants' Appeal Brief. In particular in the Answer, the Examiner reasoned:

Specifically, Jain et al. teaches: "The system of the invention is powerful (i) in accepting viewer specification at a high level of those particular objects and/or events in the scene that the user/viewer desires to be shown, and (ii) to subsequently identify and track all user/viewer-selected objects and events (and still others for other users/viewers) in the scene." - col. 7, ll. 10-15; "The viewer can command the selection of real, or ... even the synthesis of virtual, video images of the scene in response to any of his or her desired and selected (i) spatial perspective on the scene, (ii) static or dynamically moving object appearing in the scene, or (iii) event depicted in the scene." - col. 7, ll. 37-43; "...The system classifies, tags and tracks objects in the scene, including static objects such as field markers, and dynamically moving objects such as the football and the football players..." - col. 7, ll. 51-64; "...an object that is out of view, too small, and/or occluded from view in one camera is in view, large and/or un-occluded to the view of another camera." - col. 34, ll. 43-45; "FIG. 13 is a graphical illustration showing the intersection formed by the rectangular viewing frustum of each camera scene onto the environment volume ... the filled frustum representing possible areas where the object can be located in the 3-D model while, by use of multiple views, the intersection of the frustum from each camera will closely approximate the 3-D location and form of the object in the environment model." - col. 11, ll. 66-67, and col. 12, ll. 1-7; Figs. 18, 17A-17D, 19A-19E, 20A-20D, 21).

In other words Jain et al. teaches selecting, tracking and displaying both mobile (e.g., football player, football, person walking, person bicycling, etc.) and static (e.g., walkway, etc.) objects located within a scene. Displaying is implemented via

the use of a viewing frustum defined by a respective selected spatial perspective, wherein no one viewing frustum is able to capture the whole scene in its entirety. For example, in Figs. 17A-17D Jain et al. illustrates two people walking, one person bicycling and a moving vehicle ("FIGS. 17a through 17d are four pictorial views of the campus courtyard ... the scene containing four moving objects including a vehicle, two walkers and a bicyclist."). Each of said Figs. 17A-17D illustrate a respective view frustum as defined by a respective spatial perspective (e.g., camera such as camera 1, 2, 3 or 4) wherein only a single viewing frustum is displayed at a time ("...but at any given time only a single best camera is used..." - col. 18, ll.23-36). It is the position of the Examiner that for each viewing frustum one is only able to view the objects located within said scene when said objects are within said viewing frustum (e.g., within a specified proximity of said view volume).

(Ans. 16-17)(Emphasis omitted).

We concur with the conclusion reached by the Examiner.

Additionally, we note that Appellants' Specification makes much of avoiding the performance of unnecessary calculations (e.g., "said video image stream is not generated when said representation is occluded."

(Claim 17)). We take notice that avoiding the performance of unnecessary calculations is an old, well-known goal in the data processing art. We conclude that avoiding the generation of hidden (occluded) video image representations would have been obvious on this basis.

CONCLUSIONS

(1) The Examiner has not erred in rejecting claims 13-15, 17-24, and 27-33 as being anticipated under 35 U.S.C. § 102(b).

Appeal 2009-008930
Application 10/684,030

- (2) The Examiner has not erred in rejecting claims 16, 25, and 26 as being unpatentable under 35 U.S.C. § 103(a).
- (3) Claims 13-33 are not patentable.
- (4) The appeal is dismissed as to claims 1-12.

DECISION

The Examiner's rejections of claims 13-33 are affirmed.
No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(v).

AFFIRMED

KIS

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